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ABSTRACT

Poor health has been implicated as a suppressor of the life satisfaction of older adults. To clarify the contribution of arthritis to this process, functional disability, negative affect, pain, current severity of the disease, self-esteem, perception of general health, and internal health locus of control, were placed within a causal model as predictors of life satisfaction. Interviews were conducted with 84 white, middle-class subjects over age 60 who had rheumatoid arthritis or osteoarthritis. Path analysis was used to sort out the relationships among the predictors and explain their effect on life satisfaction as measured by the Life Satisfaction Index-Z (Wood, Wylie, and Sheafor, 1969). The model explained approximately 40 percent of the variance in life satisfaction. Pain, negative affect, functional disability, and a sense of internal control over health were significant contributors. A higher degree of pain was significantly predictive of both negative affect and the perceived severity of the disease. Thus, specific arthritis-related problems were the major suppressors of life satisfaction in this sample. These results suggest that the life satisfaction of older adults with arthritis may be enhanced by effective self-management strategies that focus on pain control, functional independence, and reduction of negative feelings. (Author/JAC)

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THE IMPACT OF ARTHRITIS ON LIFE SATISFACTION OF OLDER ADULTS

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ABSTRACT

Poor health has been implicated repeatedly as a suppressor of the life satisfaction of older adults. This study was undertaken to clarify the contribution of arthritis to this process.

Functional disability, negative affect, and pain are considered major indicators of health status in persons with arthritis. These variables, along with current severity of the disease, self-esteem, perception of general health, and internal health locus of control, were placed within a causal model as predictors of life satisfaction.

Eighty-four white, middle-class subjects ($\bar{X}$ age=70) with either rheumatoid arthritis or osteoarthritis were interviewed while the outpatients or inpatients of a large, private rheumatology practice. Path analysis was used to sort out the relationships among the predictors and explain their effect on life satisfaction as measured by the LSI-Z.

The model explained approximately 40% of the variance in life satisfaction. Pain, negative affect, functional disability, and a sense of internal control over health were significant contributors. A higher degree of pain was significantly predictive of both negative affect and the perceived severity of the disease. Thus, specific arthritis-related problems were the major suppressors of life satisfaction in this sample.

These results suggest that the life satisfaction of older adults with arthritis may be enhanced by effective self-management strategies that focus on pain control, functional independence, and reduction of negative feelings.

Older adults who say they are in poor health also tend to experience lower life satisfaction. Typically, this subjective perception of health is measured by asking subjects to rate their own health either explicitly or implicitly relative to other people their own age (Cockerham, Sharp & Wilcox, 1983). Those who perceive themselves to be less healthy are also the ones who rate their life satisfaction as lower (Fengler & Jensen, 1981; Larson, 1978). Some studies have shown, however, that many institutionalized clients, who are considered by health care providers to be in poor health because of multiple physical problems, tend to rate their health as better than those around them (Fillenbaum, 1979); and, correspondingly, rate their life satisfaction higher (Schwirian, 1982). Thus, the relationship of specific disease-related problems to life satisfaction is not clear. The purpose of this study was to clarify the contribution of arthritis, a prevelant chronic disease of older adults, to life satisfaction.

Arthritis has multiple impacts on the lives of persons afflicted with it. Physical, mental, and social well-being can all be decreased by this disease that is non-life threatening for the most part, but, in its most severe forms, extremely painful and disabling. Health care providers in rheumatology frequently cite functional disability, pain, psychological distress, and the person's own perception of the severity of the disease as factors that are the most likely to decrease a client's sense of well-being (Brown et al, 1984). Clients' perceptions of their ability to control the disease, perceptions of general health, and self-esteem are also thought to be associated with the disability, depression, and pain of arthritis (Callahan, Nicassio, Wallston & Pincus, 1984).

So far little research has been directed toward gathering empirical data to substantiate these beliefs. Data from two studies recently completed using a path analytic approach showed causal links among functional disability and pain, psychosocial variables, and satisfaction with life in subjects with arthritis (Burckhardt, 1982; in press). The study reported here used a subsample of older adults derived from these larger samples.

METHODS

Development of the Causal Model. This study hypothesized that the impact of functional disability and pain on life satisfaction of older adults would be mediated by the person's subjective perceptions of health and severity of disease, negative feelings, as well as by a sense of self-esteem and internal locus of control. The proposed causal model that resulted from this hypothesis is shown in Figure 1. A path coefficient significantly different from zero was hypothesized for each path leading from functional disability and pain to each of the mediating variables. (For ease of presentation only one arrow has been drawn to each mediating variable. However, a separate hypothesis was made for each pair of variables.) Path coefficients between functional disability and life satisfaction and pain and life satisfaction were hypothesized to be zero. In the case of the mediating variables, each one was hypothesized to have either a positive or negative non-zero path coefficient.

Sample. The data for the study were derived from a subsample of 84 subjects (73 women and 11 men) 60 years of age or older ($\bar{X}$ age=70) drawn from two larger studies of adults with arthritis. All subjects in the subsample had been diagnosed with either rheumatoid arthritis or osteoarthritis for an

average of 15 years (range 1-66 years). They were white and middle-class (formal education, $\bar{X}$=13 years; income, median=$13,000; occupation, $\bar{X}$=6 on a 1 to 9 point scale). Forty subjects were interviewed while inpatients in an arthritis treatment center. The other 44 subjects were outpatients and were interviewed in their own homes. All subjects were the patients of one large, private rheumatology practice within a major American city.

Instruments. Life satisfaction was assessed using the LSI-Z (Wood, Wylie, & Sheafor, 1969). The 13-item scale was modified by deleting one item--"In spite of what people say, the lot of the average man is getting worse not better." It was deleted because of the ambiguity of the statement which led to a lack of positive contribution to the internal consistency reliability of the instrument.

Health perception and perceived severity of the arthritis were each measured by single items that used a Cantril Ladder format (Cantril, 1965). Respondents were asked to rate their present general health and severity of arthritis on visual 10-rung ladders that used "worst my health has ever been" (1) "best my health has ever been" (10) and "least bothersome my arthritis has ever been" (1) "worst my arthritis has ever been" (10) as anchors.

Health locus of control was measured by the Internal Health Locus of Control Subscale of the Multi-dimensional Health Locus of Control Scales (Wallston, Wallston & DeVillis, 1978). Negative affect was assessed by a ten-item negative affect adjective checklist, containing words such as depressed, discouraged, angry, and frustrated, that was scored on a four-point scale ranging from "not at all" (0) to "very" (3). Self-esteem was measured by the six-item scale used by Longino, Peterson, and McClelland (1980). This scale was scored from "not descriptive of me" (1) to "very descriptive of me" (3).

Functional disability was measured by summing four subscales, containing 18 items, of the Arthritis Impact Measurement Scales (Meenan, Gertman & Mason, 1980). These subscales contained items that measured mobility, dexterity, activities of daily living and physical activity. A scoring system in which 1 equaled an answer that indicated disability and 0 equaled no disability was used.

Pain was assessed by two questions that asked the subject to rate the intensity of pain in the past week and at the present time on a six-word scale ranging from "none" (0) to "excruciating" (5) and by the 20-subclass pain descriptor instrument from the McGill Pain Questionnaire (Melzack, 1975). These three scales were weighted and summed into a composite index of pain by the use of the RAO method of factor analysis (Allen, 1974). Table 1 contains the means, ranges, and standard deviations of all variables in the model as well as Cronbach's alpha for each multi-item scale and coefficient rho for the composite index.

Data Analysis. To evaluate the model, stepwise multiple regression analyses were conducted using all the independent variables (X_2 to X_8) as predictors of life satisfaction. First, variables X_2 to X_6 were regressed on functional disability (X_7) and pain (X_8). Then life satisfaction (X_1) was regressed on all the independent variables. In this way standardized path coefficients (beta weights) were obtained for all fifteen directional paths hypothesized by the model as well as for the two paths that were hypothesized to be zero. An alpha level of .10 was set for determining the existence of a non-zero path.

RESULTS

The total variance explained for life satisfaction with all the variables

included in the model was approximately 40 percent (35 percent when R^2 was adjusted for the number of cases and independent variables). Significant direct effects on life satisfaction are shown in Figure 2. They included health locus of control, negative affect, and functional disability. Pain had a significant direct effect on negative affect, and both functional disability and pain had significant direct effects on perception of severity of disease. All other paths higher than .04 are drawn on Figure 2 as dotted lines for purposes of explanation only and are not statistically significant at the previously set alpha level.

DISCUSSION AND CONCLUSIONS

According to the analysis, a sense of internal health locus of control contributes the most explanation to the variability in life satisfaction. The more personal control older adults believe they have over their health, the more satisfied they are with their lives. The effect of internal health locus of control is not dependent upon functional disability or pain. Functional disability does exert its own direct negative effect on life satisfaction (-.16) and has a total negative effect (-.21) which includes the indirect effects through severity of disease and self-esteem. But none of its effects are causal throught internal health locus of control. In the studies by Burckhardt cited above, both models showed moderate significant negative path coefficients between functional disability and internal health locus of control. The finding in this sample seems to lead to the conclusion that in older adults locus of control may not be a state type of variable dependent upon disease status but rather resembles more closely a personality characteristic.

Contrary to substantial previous evidence, perception of general health by the subjects in this sample did not have a significant effect on life satisfaction. This lack of effect cannot be explained by correlation with other variables in the model (the statistical problem of multicollinearity) since none of the zero-order correlation coefficients were statistically significant. Perhaps the lack of causal effect is due to the difference in the way the question of perceived health was addressed. Subjects in this study were asked to self-anchor their health perception in terms of their own life experience not that of other people, thus removing a source of bias inherent in most other studies. By using this method, subjects' perceptions of their general health may have resembled more closely actual health status rather than a positive or negative response set. The lack of causal effect may also have been due to the tendency of these subjects to separate their arthritis from their general health. It was not uncommon for subjects to rate their arthritis as severe but their general health as very high. In this way general health became of little importance in determining life satisfaction as the disease-related problems took precedence.

The model indicates that pain played a major role in contributing to both negative affect and perception of severity of the disease. Pain's unique contribution to life satisfaction, however, is not great (.10). Rather, it exerted its impact through the mediating variables leading one to expect that if pain could be controlled, psychological distress that interferes with life satisfaction could also be controlled. Medical therapy that focuses on control of the severity of the disease (eg. antirheumatic drug therapy for rheumatoid arthritis) might also contribute to life satisfaction through decreasing both functional disability and pain. The

model, as presented in this paper, is linear and unidirectional, but there is no reason to believe that that is the case in reality. Therefore, most variables in the model probably have reciprocal effects on one another.

In summary, specific problems of pain, functional disability, and negativity significantly affect the life satisfaction of older adults with arthritis. Because a strong sense of personal control over health also affects life satisfaction, self-management strategies that focus on pain control, functional independence, and reduction of negative feelings might, in conjunction with medical therapy, enhance life satisfaction in those portions of the older population that are willing to take responsibility for their health and well-being.

FIGURE 1. HYPOTHESIZED CAUSAL MODEL

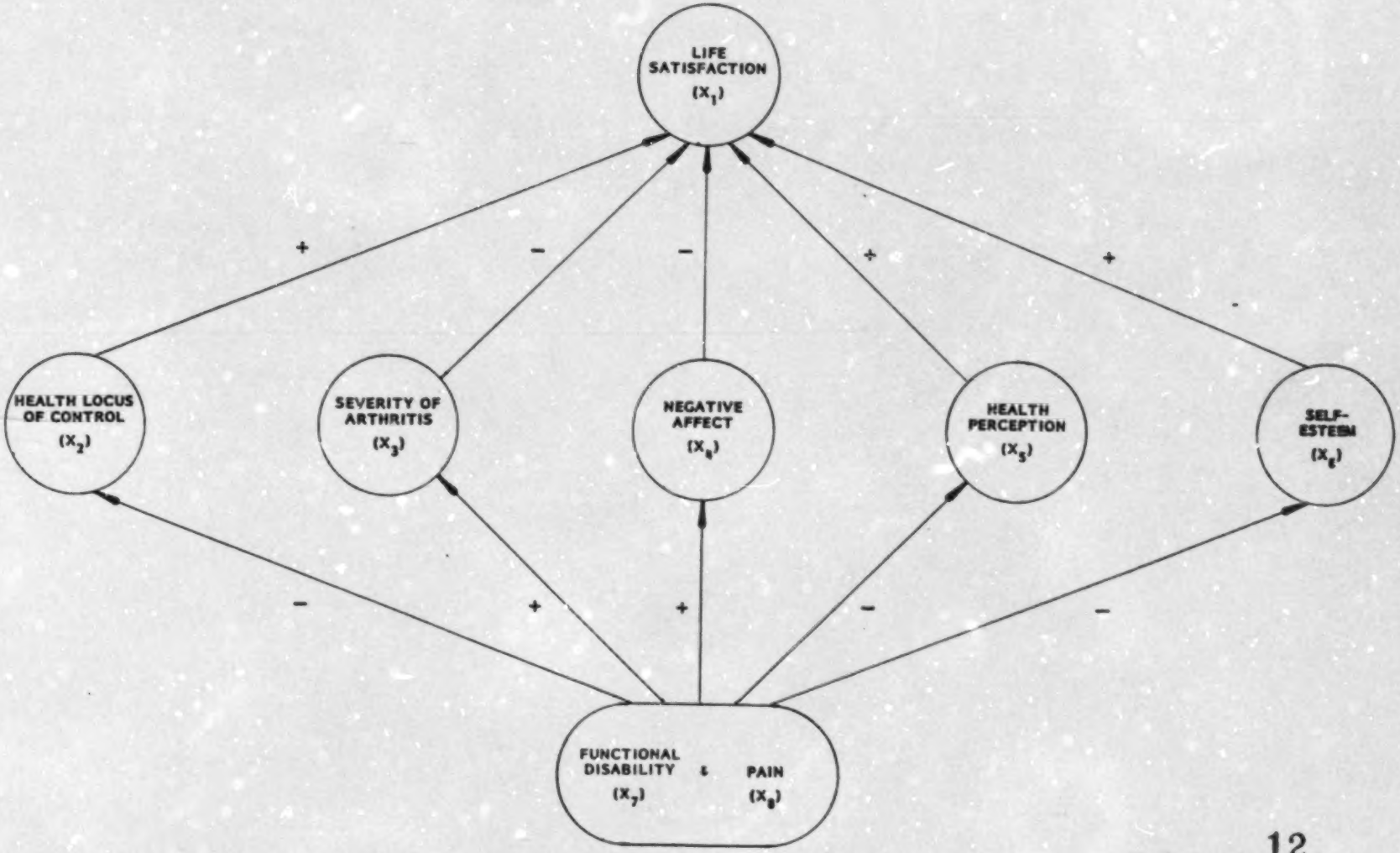
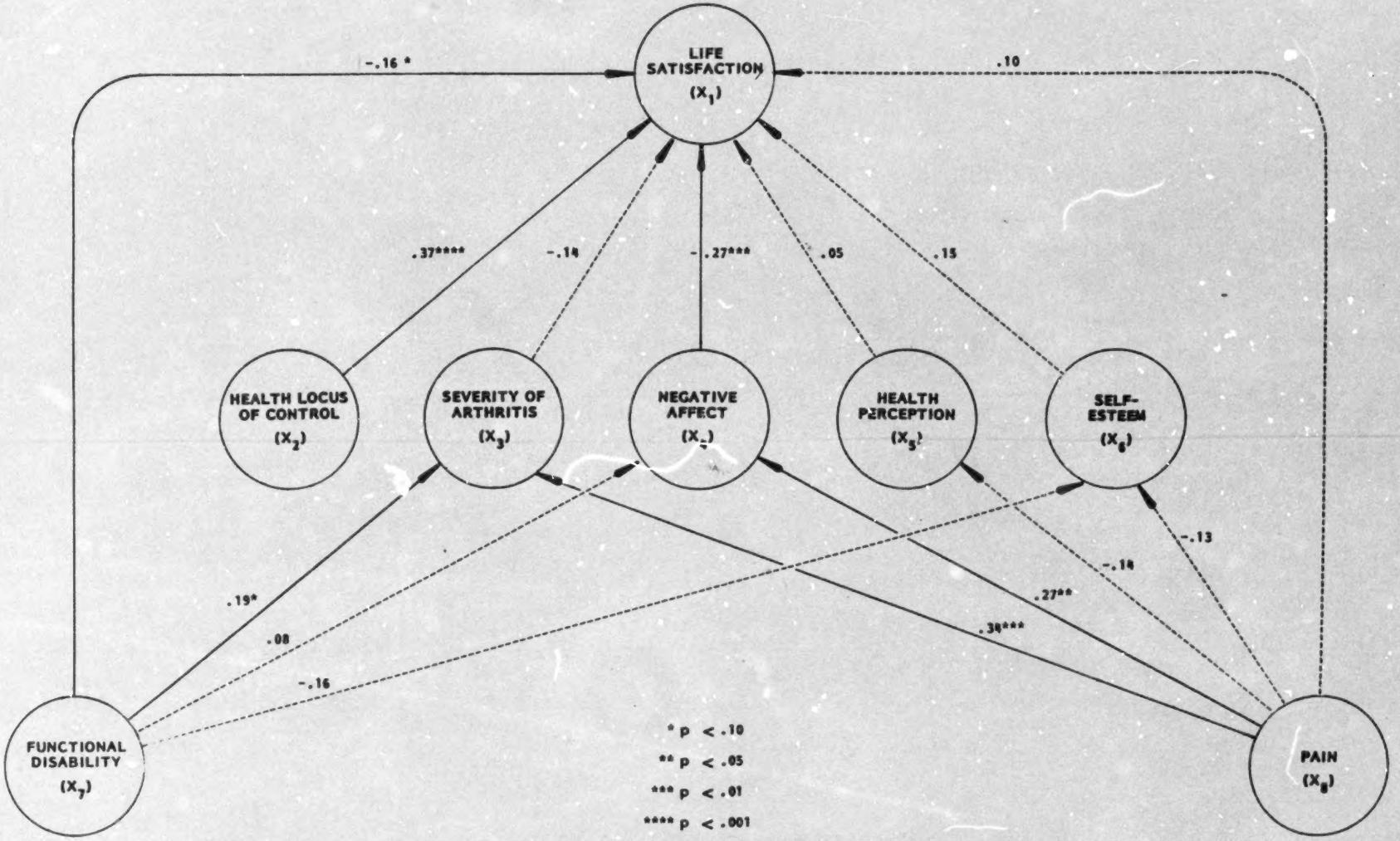


TABLE 1. MEANS, STANDARD DEVIATIONS, RANGES, AND RELIABILITY COEFFICIENTS OF VARIABLES IN THE MODEL

VARIABLES	MEAN	STANDARD DEVIATION	RANGE		RELIABILITY COEFFICIENT
FUNCTIONAL DISABILITY	6.5	3.4	0 - 18	* (0-18)	.86
PAIN	6.7	2.6	1 - 13	(1-16)	.95
SELF-ESTEEM	14.7	2.2	8 - 18	(6-18)	.89
HEALTH PERCEPTION	5.9	2.4	1 - 10	(1-10)	--
NEGATIVE AFFECT	9.4	9.4	0 - 40	(0-40)	.85
SEVERITY OF ARTHRITIS	6.0	2.7	1 - 10	(1-10)	--
HEALTH LOCUS OF CONTROL	24.3	5.8	11 - 36	(6-36)	.86
LIFE SATISFACTION	15.8	5.1	3 - 24	(0-24)	.78

* POSSIBLE RANGE IN PARENTHESES

FIGURE 2. PATH DIAGRAM OF DIRECT EFFECTS



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